

Morphological Characteristics and Pathogenicity of *Synchytrium psophocarpi* (Rac.) Baumann Associated With False Rust on Winged Bean

ABSTRACT

Problem statement: Winged bean (*Psophocarpus tetragonolobus* L.) is an important tropical legume in countries like Malaysia due to its potential as a high protein value crop. However, bright-orange pustules observed on the veins of young leaves, stems, pods and sepals depict symptoms of false rust disease on beans. The causal agent of this disease has been found to be *Synchytrium psophocarpi*. Currently, there is no published literature of this or other related species in Malaysia. Thus, there is a very serious lack of knowledge on the taxonomic characterization and pathogenicity of the local fungus. Therefore, there is an important need for this microorganism to be documented. **Approach:** This study was reported based from samples obtained from infected winged bean plants found in the fields around the University Putra Malaysia campus in Serdang, Selangor, Malaysia. The morphological characteristics were studied using dark field and scanning electron microscope. Meanwhile, pathogenicity test was carried out using two methods which were moist chamber and on Petri dish. **Results:** The sporangia were spherical to ovoid in shape and approximately 20.69 μm in diameter. The average diameter for spore measured was 2.02 μm and the flagella were 10.75 μm in length. Positive disease development with false rust disease symptoms was observed in both methods of inoculation practiced. It confirmed the pathogenicity of the fungus as the causal pathogen with the appearance of clear disease symptoms. **Conclusion:** This research finding is the first detailed report for *Synchytrium psophocarpi* associated with false rust disease of winged bean in Malaysia. It described the morphology, zoospore production and pathogenicity of the causal fungal organism. This information would be very useful for the studies involving this pathogen in future.

Keyword: winged bean, *Synchytrium psophocarpi*, false rust, pathogenicity